

REMARKS

The above-identified patent application has been amended and reconsideration and re-examination are respectfully requested.

The Examiner considered the Information Disclosure Statement submitted by Applicant.

The Examiner indicated the drawings were informal but were acceptable for examination purposes. Applicant will submit formal drawings upon an indication of allowable subject matter.

The Examiner rejected claims 1-18 under 35 U.S.C. 103(a) as being unpatentable over Walker et al., U.S. Patent 5,897,620 in view of Bierma et al., U.S. Patent 5,758,149.

Applicant has amended claim 1 to more particularly point out Applicant's invention.

Applicant's claim 1, as now amended, recites a method for managing a cache of entries ✓containing availability information. This feature is neither described nor suggested by Walker taken separately or in combination with Bierma. Applicant's claim 1 further recites determining, ✓based on a criterion for availability information that a stored, retrieved answer in the cache is stale. This element is also neither described nor suggested by Walker, taken separately or in combination with Bierma. Claim 1 further recites sending an availability query to a source of availability information for an airline based on determining that the answer was stale. This feature is also not suggested by the references. Applicant's claim 1 thus distinguishes over Walker and Bierma.

The Examiner takes the position with respect to claim 1 that Walker discloses a data processing system for determining the availability of seats on a particular airline flight. The Examiner's characterization of Walker's disclosure is not correct. Walker does not cache seat availability queries. Walker merely accesses a conventional yield management system used by airlines to allocate seats amongst fare classes.

The availability technique, which Walker discloses is the actual querying of an availability system for availability data in order to satisfy a request to see if a travel option is available. This is not what is claimed in Applicant's claim 1. Applicant's claim 1 recites a method of managing a cache of availability information. As part of that method, Applicant determines that the cache has entries, which may be stale. The method in claim 1 initiates an

availability query if the cache entries are determined to be stale. The initiated query could be to an actual availability system, a predictor of availability information, and so forth.

Thus, while Walker describes sending an actual availability query to a source of availability information, Walker does not describe a cache and managing the cache. Applicant's invention is to eliminate or avoid as much as possible live queries to an AVS system (as taught by Walker). Rather, Applicant teaches a cache of entries that can be used to satisfy availability queries and more specifically teaches managing the cache according to a criterion. Walker thus does not teach sending an availability query based on determining that the answer from the cache was stale, as recited in Applicant's claim 1.

The Examiner notes that Walker does not disclose a cache for maintaining entries for seat availability and uses Bierma for disclosing an analogous system for suggesting caches are well-known repositories for storing or maintaining data concerning airline seat availability, referencing column 1, lines 41-46, column 3, lines 27-32 et seq. Applicant disagrees that Bierma discloses any analogous system to that recited in Applicant's claim 1. Moreover, Applicant maintains there is no suggestion to combine the teachings of Walker with Bierma since neither Walker nor Bierma relate to the problem being solved by Applicant's invention, namely, avoiding the unnecessary querying of an airline's availability system for airline availability information.

Applicant's claim 1 recites a technique to manage entries in the cache and to determine when the entries in the cache need to be updated by an actual availability query. However, this teaching is totally lacking in Bierma. Walker clearly does not provide the missing teaching either. Thus, neither Bierma nor Walker suggest managing the data in the cache. Bierma is directed to managing load on a DBMS and not with the usefulness of the data, e.g., determining if availability information stored in the cache is stale. Accordingly, claim 1 is distinct from Walker and Bierma.

Applicant's claim 5 which calls for an availability system for use with a travel planning system comprising a cache and a cache manager that manages entry information in the cache is likewise neither described nor suggested by Walker in view of Bierma for the reasons generally discussed above.

Applicant's dependent claims add further distinct features to the invention. For example, claim 2 distinguished from Walker and Bierma by monitoring availability queries made to the cache by a travel planning system to determine which flights, sets of flights, the flights for a certain day, date, or market have a high demand for availability information. Walker does not monitor availability queries. Thus, there are no teachings in Walker of monitoring such queries to determine which sets of flights, etc. have a high demand for availability information.

Applicant's claims 3 and 4 are likewise further distinguishable over Walker and Bierma. Claim 3, for example, recites that determining if an answer is stale comprises scheduling a list where a list of keys of entries to update or add are generated and for each entry in the order given submit a query to availability source and store the results in the cache. These features are neither described nor suggested by Walker or Bierma. Applicant's claim 4 which recites that determining if the stored answer is stale comprises scheduling multiple lists by processing one entry from each list by a round-robin polling through the list, returning to the first list to process the next entry, and generating an entry for each entry in the list in the order given by submitting a query to the availability source is also neither described nor suggested by Walker.

Applicant's claims 6-18 add additionally distinct features of Applicant's claim 5. For example, claims 10-13 serve to further limit claim 9 and base claim 5 for the reasons generally discussed in conjunction with claims 3 and 4.

Claim 13, which depends on claim 10 recites that entries to be added, modified, or deleted are determined by using a predictor or model of the availability queries which are likely to be posed or are likely to be useful in the future. This feature is not suggested. Claim 14, which depends on claim 13 recites that the predictor or model is based on a deterministic, probabilistic, or statistical classifier or predictor, databases or cache of historical data or previously predicted information, simulations of various availability systems and actual availability data sources. Such teachings are totally absent in Walker and Bierma since neither Walker nor Bierma have any concept of a predictor. Claims 15-17 add additional features to claim 10.

Applicant has added new claims 19-32. These claims are also distinguished from Walker taken separately or in combination with Bierma. Applicant's claim 19 likewise calls for a computer program product for managing a cache of entries having availability information for a

mode of transportation. Claim 19 recites instructions to determine a stored answer in the cache is stale and update the entry in the cache by sending an availability query to a source of availability information. These features are neither described nor suggested by Walker taken separately or in combination with Bierma.

Claims 20-22 add distinct features to claim 19 for the reasons discussed in conjunction with claims 3 and 4.

Applicant's claim 23 recites a computer program product comprising instructions to cache entries of availability information for seats for a mode of transportation and manage entry information in the cache based upon the current demand for specific availability information to determine when an entry should be added, deleted or modified in the cache. These instructions are neither described nor suggested by Walker taken separately or in combination with Bierma.

Applicant's claims 24-28 add additionally distinct features to claim 23 and are also allowable with claim 23.

The art cited but not applied is seen as neither describing nor suggesting applicant's invention whether taken separately or in combination with the art of record.

Accordingly, in view of the above amendments and remarks, it is submitted that the case is now in condition for allowance and such action is respectfully requested.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant : Baggett et al.
Serial No. : 09/431,366
Filed : November 1, 1999
Page : 10

Attorney's Docket No.: 09765-018001

Enclosed is a Enter \$ amount check for excess claim fees and a Enter \$ amount check for a Petition for Extension of Time. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: _____

9/12/02

Denis G. Maloney
Reg. No. 29,670

Fish & Richardson P.C.
225 Franklin Street
Boston, Massachusetts 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

20427360.doc

Version with markings to show changes made

In the claims:

Claims 1, 3, 5, 14 and 16 have been amended as follows:

(Amended) 1. A method for managing a cache of entries containing availability information for a seat on an airline, comprises:

determining, based on a criterion for availability information whether a stored, answer in the cache is stale and, if the retrieved stored answer is stale,

sending an [actual] availability query to a source of availability information for an airline based on determining that the answer was stale.

(Amended) 3. The method of claim 1 wherein determining if the stored answer is stale comprises:

scheduling a list where a list of keys of entries to update or add [are generated], and for each entry on the list in the order given,

submitting a query to the availability source; and

storing the result in the cache, by updating an entry if present and adding an entry if not present in the cache.

(Amended) 5. An [availability] availability system used for a travel planning system comprises:

a cache including[es] a plurality of entries of availability information of seats for a mode of transportation; and

a cache manager that manages a quality level of entry information in the cache.

(Amended) 14. The availability system of claim [5] 13 wherein the predictor or model is based on a deterministic, probabilistic, or statistical classifier or predictor, databases or cache of historical data or previously predicted information, simulations of various availability systems and actual availability data sources.

Applicant : Baggett et al.
Serial No. : 09/431,366
Filed : November 1, 1999
Page : 12

Attorney : [REDACTED] Docket No.: 09765-018001

(Amended) 16. The availability system of claim [10] 13 wherein the predictor used to guide the cache manager operation predicts the rate of change or time of change of the seat availability.